



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : B42D 15/00	A1	(11) International Publication Number: WO 94/01288 (43) International Publication Date: 20 January 1994 (20.01.94)
<p>(21) International Application Number: PCT/US93/05268</p> <p>(22) International Filing Date: 4 June 1993 (04.06.93)</p> <p>(30) Priority data: 07/912,093 9 July 1992 (09.07.92) US 07/968,249 29 October 1992 (29.10.92) US</p> <p>(60) Parent Applications or Grants (63) Related by Continuation US 968,249 (CON) Filed on 29 October 1992 (29.10.92) US 912,093 (CON) Filed on 9 July 1992 (09.07.92)</p> <p>(71)(72) Applicant and Inventor: NESIS, Dov [IL/US]; Cherokee Station, P.O. Box 20309, New York, NY 10028 (US).</p>		<p>(74) Agent: USHER, Robert, William, James; 1133 Broadway, # 1515, New York, NY 10010 (US).</p> <p>(81) Designated States: AT, AU, BB, BG, BR, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>
(54) Title: COPY PREVENTING DEVICE AND METHOD		
<p>(57) Abstract</p> <p>A copy preventing sheet-form screen (11) comprises a lenticular screen (19) formed by a sheet of transparent plastic material having a series of adjacent lens portions (13) with major optical axes perpendicular to the front face and a series of light blocking striae (16) located spaced apart underlying respective lens portions. The striae extend across a major part of the major optical axes so that when covering a sheet printed with meaningful information, the screen enables the information to be easily seen when viewed obliquely in ambient white light but prevents a meaningful copy thereof being made by conventional, perpendicularly aligned, phototransference technique. The screen can be attached to the printed sheet by adhesive (18) or formed as an adhesive tape to cover only preselected areas of printing. The screen may also form one or both sides of a security envelope enclosing the printed sheet and sealed by a security label carrying an authorized signature.</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FR	France	MR	Mauritania
AU	Australia	GA	Gabon	MW	Malawi
BB	Barbados	GB	United Kingdom	NE	Niger
BE	Belgium	GN	Guinea	NL	Netherlands
BF	Burkina Faso	GR	Greece	NO	Norway
BG	Bulgaria	HU	Hungary	NZ	New Zealand
BJ	Benin	IE	Ireland	PL	Poland
BR	Brazil	IT	Italy	PT	Portugal
BY	Belarus	JP	Japan	RO	Romania
CA	Canada	KP	Democratic People's Republic of Korea	RU	Russian Federation
CF	Central African Republic	KR	Republic of Korea	SD	Sudan
CG	Congo	KZ	Kazakhstan	SE	Sweden
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovak Republic
CM	Cameroon	LU	Luxembourg	SN	Senegal
CN	China	LV	Latvia	TD	Chad
CS	Czechoslovakia	MC	Monaco	TC	Togo
CZ	Czech Republic	MG	Madagascar	UA	Ukraine
DE	Germany	ML	Mali	US	United States of America
DK	Denmark	MN	Mongolia	UZ	Uzbekistan
ES	Spain			VN	Viet Nam
FI	Finland				

TITLE OF THE INVENTION: COPY PREVENTING DEVICE AND METHOD

FIELD OF THE INVENTION

The invention relates to a method and device for preventing meaningful copies of sheets of information being made by the usual perpendicularly aligned, phototransference techniques such as xerographic, offset printing, and facsimile processes.

BACKGROUND OF THE INVENTION

The importance of preventing unauthorized copying by such phototransference techniques confidential and other meaningful information such as customer lists, formulae, plans, designs and signatures is well recognized.

Previous attempts at copy prevention have not proven entirely satisfactory. Such approaches have, for example, included printing the information on paper colored to provide insufficient contrast with the printed material when photocopied by xerographic or electrostatic copying techniques but legible to the naked eye in ambient white light. However, such approaches require specially dedicated paper and printing techniques as limitations are imposed on the colors of print and paper and the contrast is usually considered to be rather poor so as to render the document somewhat difficult to read, particularly at a distance, unattractive to both read and handle and generally aesthetically undesirable.

Another approach has been to print the information in a color, such as yellow, to which the standard copier is relatively insensitive.

Examples of such prior approaches are taught by US Patent 4,632,429 issued December 30, 1986 to Gardner; US 4,522,429 issued June 11, 1985 to Gardner and US 4,281,931

issued August 4, 1981 to Van Auken.

It is known to provide displays in which two or more pictures or words can be seen by varying the viewing angle, often to provide a motion or a three dimensional effect, by splitting representations of the different pictures or words into striae, arranged alternately in association with optical screen structures which provide preferential reflection of the respective striae at the differing angles of incident light. However, none of these proposals teach the present invention.

Examples of optical screen structures used for this purpose, including some which incorporate lenticular screens, are taught in US 3,119,195 issued January 28, 1964 to Braounhut ; US 3,586,592 issued June 22, 1971 to Cahn; US 1,475,430 issued November 27, 1923 to Curwen; US 3,268,238 issued August 23, 1966 to Finkel; US 2,832,593 issued September 25, 1957 to Anderson and US, 1,969,551 issued August 7, 1934 to Francis, the disclosures of which are incorporated by reference herein.

20 SUMMARY OF THE INVENTION

It is an object of the invention to provide a copy preventing device and method which will avoid or ameliorate at least some of the above mentioned disadvantages.

According to one aspect of the invention, a copy preventing sheet-form screen comprising a lenticular screen formed by a sheet of transparent material having front and rear faces and a series of adjacent lens portions with major optical axes perpendicular to the front face and a series of light blocking striae located spaced apart underlying respective lens portions and extending across a major part of their major optical axes so that positioning the copy preventing sheet-form screen with the rear face in covering relation to a sheet carrying indicia providing meaningful information, enables the information to be easily seen when viewed obliquely in ambient white light but prevents a meaningful copy thereof being made by conventional,

perpendicularly aligned, phototransference techniques such as xerographic, offset printing, and facsimile processes.

Thus, the meaningful information may be read when the document is viewed obliquely but will be unintelligible when
5 copied by the conventional, perpendicularly aligned, phototransference techniques such as xerographic, offset printing, and facsimile commonly available in offices.

The striae may be formed as dark bands or as mirror surfaces and may be applied to the rear face of the screen
10 by a printing embossing or other suitable technique. The striae may also be formed within the screen material during manufacture thereof.

In a convenient form, the copy preventing sheet-form screen has a coating of contact adhesive on a rear face
15 thereof covered by a removable backing sheet which may be simply peeled away to expose the adhesive permitting the copy preventing sheet-form screen simply positioned over and adhered to the document carrying information to be protected.

Alternatively, the information to be protected may be
20 formed on the screen itself as striae alternating with the information obscuring striae, or, laminated on the rear face of the screen.

In a most convenient form the copy preventing sheet-form screen may be formed as adhesive tape enabling only
25 precisely determined areas to be copy protected.

Where the lens portions are formed as segments of optical cylinders, a magnifying effect provided by the lens will also enhance readability of certain parts of the
30 document by the naked eye providing some compensation for any loss of resolution or for any distortion caused by the presence of the screen.

The focal length of each lenticle is equal to the lenticular screen thickness.

35 According to another aspect of the invention, a copy protected sheet comprises an optical screen including an array of adjacent, alternately arranged, first and second

optical portions having respective major reflecting optical axis extending obliquely of and perpendicularly to the sheet, respectively, and an array of adjacent, alternately arranged, first and second striae of indicia forming
5 meaningful information to be protected and other matter not to be protected, respectively, optically aligned with the first and second optical portions respectively, so that the information is easily seen when viewed obliquely in ambient white light but a legible copy of the meaningful information
10 cannot be made by conventional, perpendicularly aligned, phototransference techniques such as xerographic, offset printing, and facsimile .

During the copying process, the image of the other matter only is received and recorded, the meaningful
15 information is, in effect, masked as only a very minor or no copying light is incident thereon, producing a substantially black, grey or absence of image according to the nature of the other matter.

The optical portions may be formed by lens portions or
20 reflective (mirrored/ silvered surfaces).

The invention obviates the practical disadvantages of needing to obtain special papers and inks, which are often relatively expensive, and enables use of conventional office printing methods and machines to print the protected
25 information in house thereby also obviating a requirement for additional staff training.

According to a further aspect of the invention, there is provided a security envelope having opposite sides and a sheet receiving opening at one end, and means for sealing
30 the security envelope in closed condition, at least one of said sides comprising an optically focussed lenticular screen formed by a sheet of transparent material having front and rear faces and a series of adjacent lens portions with major optical axes perpendicular to the front face and
35 a series of light blocking striae located spaced apart underlying respective lens portions and extending across a major part of their major optical axes so that a sheet

marked with indicia providing meaningful information inserted in the envelope with the indicia towards the rear face, enables the information to be easily seen when viewed obliquely, after slight rotation from the major optical axes, in ambient white light but prevents a meaningful copy thereof being made by conventional, perpendicularly aligned, phototransference techniques including at least one of xerographic, offset printing, and facsimile.

Although the precise materials and dimensions may be substantially varied and it is normally preferred that the indicia are in sharp focus when viewed through the screen, a slight magnifying or reducing effect may be acceptable so far as the indicia remain legible.

BRIEF INTRODUCTION TO THE DRAWINGS

Specific embodiments of the invention will now be described by way of example only and with reference to the accompanying drawings in which:

Figure 1 is a fragmentary cross-sectional view of a first embodiment of the invention;

Figure 2 is an adhesive tape according to a second embodiment of the invention;

Figure 3(a) is a perspective view of the screen adhered to an information carrying sheet;

Figure 3(b) is a plan view representing a xerographic copy of the front of the screen protected sheet shown in Figure 3(a); Figure 3(c) is a fragmentary cross-sectional view of the first embodiment of the invention adhered to an information carrying sheet and illustrating the optical principles;

Figure 4(a) is a perspective view of a third embodiment of the invention comprising a security envelope incorporating an optically focussed lenticular screen, in open condition;

Figure 4(b) is a plan view of the security envelope shown in Figure 4(a) in closed and sealed condition and containing a printed sheet to be copy protected;

Figure 4(c) is a fragmentary view of a sealed area of the security envelope shown in Figure 4(b); and

Figure 5 is a fragmentary view of an alternative embodiment of security envelope.

5 DESCRIPTION OF PARTICULAR EMBODIMENTS

A protective sheet-form screen 11 comprises a lenticular screen formed by a sheet of suitable transparent plastic material such as PVC having a series of parallel ribs 14 of convex cross section forming segments of optical cylinders constituting respective hemi-cylindrical lens elements on a front face 13 thereof, with major optical axes of the respective lens elements substantially perpendicular to the sheet-form screen. Black bands 16 (eg ink.) are printed on the rear surface of the sheet-form screen in spaced apart relation underlying respective lens portions or elements and extending along and across their optical axes for approximately 50% of the width of the respective ribs. In this example, the ribs forming the individual lens elements are at a density of approximately 20 per cm. and the thickness of the screen is approximately 0.50mm so that the screen is flexible. The radius of each cylindrical lens segment is approximately 0.25mm, while the separation of each opaque band is approximately equal to the band width of approximately 0.25mm.

25 A layer of contact adhesive 18, covered by a removable backing sheet-form screen 19, coats the rear face.

In use, the backing sheet is peeled away and a protective sheet-form screen adhered in covering relation to printed or other clearly copyable material to be protected from unauthorized copying by conventional, perpendicularly aligned, phototransference techniques such as xerographic, offset printing, and facsimile. During the copying process, the exposing light from the copier is incident perpendicularly, along the major optical axes, with the effect of spreading the opaque band, as shown at A in Figure 3(c), so that the copied image completely masks the

meaningful information.

However, the information may be viewed by holding a sheet somewhat obliquely, as shown at B in Figure 3(c) when the same spreading effect will not be obtained in respect of the opaque bands and the information located exposed in the spaces between the individual bands may be readily seen as a substantially continuous image.

In a second embodiment shown in Figure 2, the protective sheet-form screen is formed as an adhesive tape 11' which provides a quick and convenient means for protecting only preselected areas of printed articles etc. while enabling a legible copy of the meaningful information on the remaining areas to be made.

The application of the protecting sheet-form screen does not require any special skill and may be performed quickly, simply and conveniently in the office, when required, without training and time consuming preparation.

In other embodiments, the individual ribs forming the lens segments may extend at any desired direction on the sheet-form screen, according to the required viewing direction.

Alternatively, the PVC sheet may be 0.25mm thick so as to be substantially more flexible and of less weight and bulk. The lens portions or ribs may be of density of between 15-150 per cm according to the application and quality of detail to be protected. Generally, the higher the density, the greater will be the clarity with less distortion of the meaningful information.

The materials chosen may be selected from various known to be used in providing lenticular screen devices for parallax panoramagrams.

In some examples, the ribs constituting the lens portions need not be cylindrical while, for some applications the bands of light blocking striae need not be continuous but formed by broken lines.

The invention can be used with information in a range of colors or in black and white.

In another embodiment shown in Figures 4(a)-4(c), a lenticular screen 11¹¹ forms both front and rear sides of a security envelope 20, the front or lenticular face of the screen being outermost. The front and rear sides are heat-sealed or otherwise fastened together, where necessary at the periphery, defining a top opening 23 for receiving a printed sheet 21, sealable in closed condition by a flap 22 coated with a permanent impact adhesive 24.

After insertion of the printed sheet, and folding and sealing the flap in closed condition, security oversealing labels 25 are applied across the junction of the flap with the front side as shown in Figure 4(b) and signed by an authorized person.

The security oversealing labels 25A may be replaced or augmented by other, reusable, sealing or closure structures such as a lockable zipper, threading or pin/clip with releasable locking devices.

As with the above described embodiments, attempts to copy the enclosed document by conventional, prependercularly aligned, phototransference techniques will merely result in a completely black copy whilst the document is clearly legible to the naked eye particularly when viewed slightly obliquely after tilting about the major parallel axes of the lenses.

Many criteria must be considered when designing an optimal copy preventing lenticular screen including thickness, cost, line (band) density, acceptance angle of individual lens segments (angle subtended by arcuate lens face) but the following approximate dimensions and materials are suitable for preventing copying by a CANON NP 4835i. The screen comprises a polypropylene lenticular layer laminated or otherwise intimately attached on a stiffening polyester base forming an integral sheet with a total thickness of 0.2mm, line density of 87 lines per cm, lens radius of 0.07mm, acceptance angle of 50°, lenticle width of 0.12mm, line width of 0.06mm. The focal length is equal to the total thickness of both materials. The line width is

approximately 50% of the lenticle width but can be increased to enhance the security aspect, probable aberrations in the lens enabling the eye to see a wider zone behind each lenticle allowing the viewer still to read the document easily with indicia of any color when rotated to the best viewing angles.

It will be appreciated that the surface contour variations defining the lens faces are virtually invisible to the naked eye (although shown on the drawing for the purpose of illustration) while the printed information appears essentially continuous as a single unbroken image with very fine resolution and clarity providing a much better result than is provided by the dimensions of the first embodiment which allows for large variations in adhesive thickness.

In the embodiment shown in Figure 5, a lenticular screen 11¹¹¹ similar to that described in relation to Figure 4 forms only the front side of the envelope 20¹, the rear side 26 being of opaque plastic material.

CLAIMS

1. A copy preventing sheet-form screen comprising a lenticular screen formed by a sheet of transparent material having front and rear faces and a series of adjacent lens portions with major optical axes perpendicular to the front face and a series of light blocking striae located spaced apart underlying respective lens portions and extending across a major part of their major optical axes so that positioning the copy preventing sheet-form screen with the rear face in covering relation to a sheet carrying indicia providing meaningful information, enables the information to be easily seen when viewed obliquely in ambient white light but prevents a meaningful copy thereof being made by conventional, perpendicularly aligned, phototransference techniques including at least one of xerographic, offset printing, and facsimile.

2. A copy preventing sheet-form screen according to claim 1 in which the striae comprise dark bands.

3. A copy preventing sheet-form screen according to claim 1 in which the striae provide mirror surfaces.

4. A copy preventing sheet-form screen according to claim 1 in which the striae are applied to the rear face of the screen by one of printing and embossing processes.

5. A copy preventing sheet-form screen according to claim 1 including a layer of adhesive on the rear face and a backing sheet removably attached to the rear face, covering the adhesive.

6. A copy preventing sheet-form screen according to claim 1 in which the lens portions are formed by parallel ribs providing cylindrical segments.

7. A copy preventing sheet-form screen according to claim 6 in which the ribs are at a density of between 15 and 150 per cm.

8. A copy preventing sheet-form screen according to claim 7 in which the screen is made of PVC of 0.25mm thickness.

9. A copy preventing sheet-form screen according to claim 8 in which the ribs forming the lens portions are at a density of 20 per cm and the striae are 0.25 mm in width.

10. A sheet of material carrying indicia providing meaningful information on a front face thereof covered by a copy preventing layer comprising a lenticular screen formed by a sheet of transparent material having front and rear faces and a series of adjacent lens portions with major optical axes perpendicular to the front face and a series of spaced apart, light blocking striae underlying perspective lens portions so as to extend across a major part of their major optical axes and alternating with striae of indicia providing the meaningful information so that the information is easily seen when the sheet is viewed obliquely in ambient white light but a meaningful copy thereof cannot be made by conventional, perpendicularly aligned, phototransference techniques including at least one of xerographic, offset printing, and facsimile.

11. A sheet of material according to claim 10 in which the striae provide mirror surfaces.

12. A method of preventing a meaningful copy of information provided by a sheet of indicia being made by conventional, perpendicularly aligned, phototransference techniques including at least one of xerographic, offset printing, and facsimile, comprising the steps of providing a lenticular screen covering the indicia formed by a sheet

of transparent material having front and rear faces and a series of adjacent lens portions with major optical axes perpendicular to the front face and a series of light blocking striae, located spaced, apart underlying respective lens portions so as to extend across a major part of their optical axes so that the information is easily seen by viewing obliquely in ambient white light but a meaningful copy thereof cannot being made by conventional, perpendicularly aligned, phototransference techniques including at least one of xerographic, offset printing, and facsimile.

13. A method according to claim 12 in which the striae provide mirror surfaces.

14. A copy preventing adhesive tape comprising a lenticular screen formed by a sheet of transparent material having front and rear faces and a series of adjacent lens portions with major optical axes perpendicular to the front face and a series of light blocking striae located spaced apart underlying respective lens portions and extending across a major part of their major optical axes so that positioning the copy preventing tape with the rear face in covering relation to a sheet carrying indicia providing meaningful information, enables the information to be easily seen when viewed obliquely in ambient white light but prevents a meaningful copy thereof being made by conventional, perpendicularly aligned, phototransference techniques including at least one of xerographic, offset printing, and facsimile.

15. A copy preventing sheet-form screen comprising an optical screen including an array of adjacent, alternately arranged, first and second optical portions having respective major reflecting optical axis extending obliquely of and perpendicularly to the sheet-form screen, respectively, and an array of adjacent, alternately

arranged, first and second striae of indicia forming meaningful information to be protected and other matter not to be protected, respectively, optically aligned with the first and second optical portions respectively, so that the
5 information is easily seen when viewed obliquely in ambient white light but a legible copy of the meaningful information cannot be made by conventional, perpendicularly aligned, phototransference techniques including at least one of xerographic, offset printing, and facsimile.

10 16. A copy preventing sheet-form screen comprising an optical screen including an array of adjacent, alternately arranged, first and second optical portions having
15 respective major reflecting optical axes extending obliquely of and perpendicularly to the sheet-form screen, respectively, and an array of adjacent, alternately arranged, first and second transparent and light obstructing
20 portions, respectively, optically aligned with the optical axes of the first and second optical portions respectively, so when the sheet-form screen is overlaid on a sheet covered
25 by indicia forming meaningful information, the information is easily seen when viewed obliquely in ambient white light but a legible copy of the meaningful information cannot be made by conventional, perpendicularly aligned, phototransference techniques including at least one of xerographic, offset printing, and facsimile.

17. A security envelope having opposite sides and a sheet receiving opening at one end, and means for sealing the envelope in closed condition, at least one of said sides comprising a screen formed by a sheet of transparent
30 material so that a sheet marked with indicia providing meaningful information inserted in the security envelope with the indicia towards the screen, enables the information to be easily seen when viewed obliquely in ambient white light but which prevents a meaningful copy thereof being
35 made by conventional, perpendicularly aligned,

phototransference techniques including at least one of xerographic, offset printing, and facsimile.

18. A security envelope according to claim 17 in which the screen is lenticular, having front, outer, and rear, inner, faces and a series of adjacent lens portions with major optical axes perpendicular to the front face and a series of light blocking striae located spaced apart underlying respective lens portions and extending across a major part of their major optical axes so that the screen spreads the light blocking striae when copied by conventional, perpendicularly aligned, phototransference techniques thereby to prevent a meaningful copy being made.

19. A security envelope according to claim 18 in which the sealing means comprises an authorized signature carrying label applied to the envelope across the opening so that the envelope cannot be opened and the sheet removed without breaking the signature carrying seal.

20. A security envelope according to claim 18 in which the sealing means is a releasable sealing structure permitting reuse of the envelope.

21. A security envelope according to claim 19 in which a closure flap is formed at the end and the sealing means includes a layer of permanent adhesive thereon, the signature carrying label being adhered across the junction of the flap and side of the envelope.

22. A security envelope according to claim 18 in which the screen comprises a polypropylene lenticular layer on a stiffening polyester base layer with a total thickness of approximately 0.2mm, line density of approximately 87 lines per cm, lens radius of approximately 0.07mm, acceptance angle of approximately 50°, lenticle width of approximately 0.12mm, and line width of approximately 0.06mm.

FIG. 1.

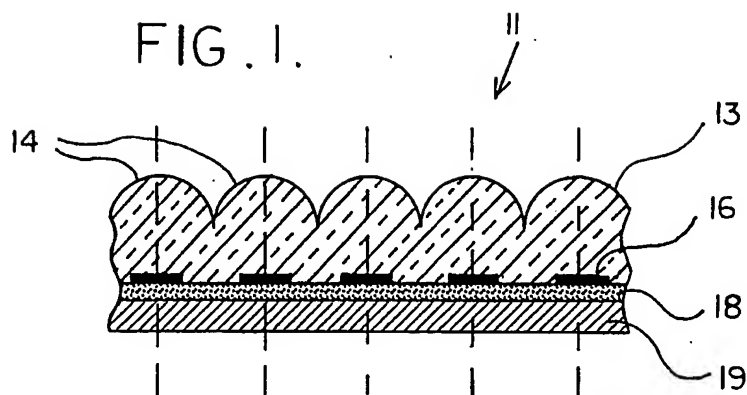


FIG. 2.

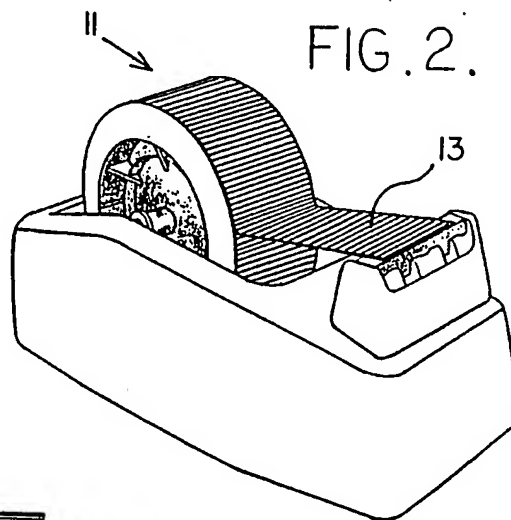


FIG. 3A.

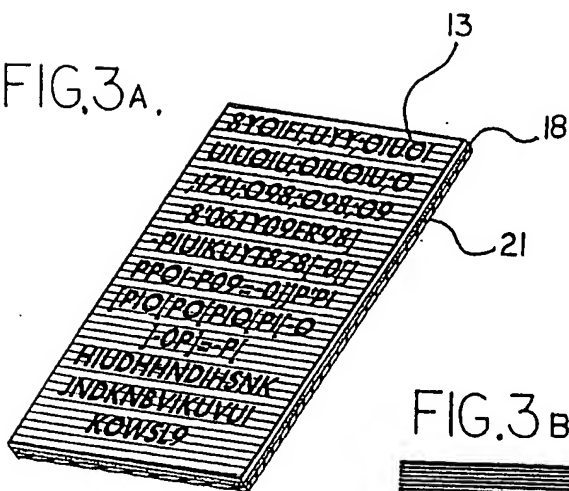


FIG. 3B.

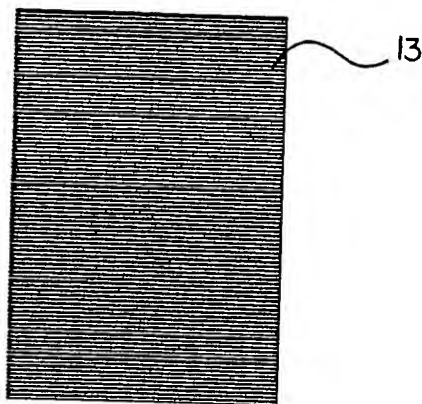
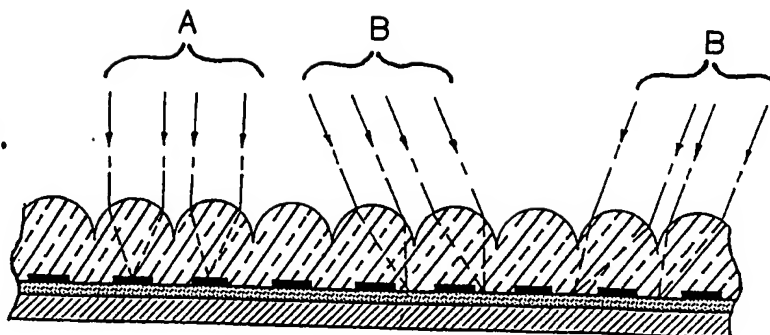


FIG. 3c.



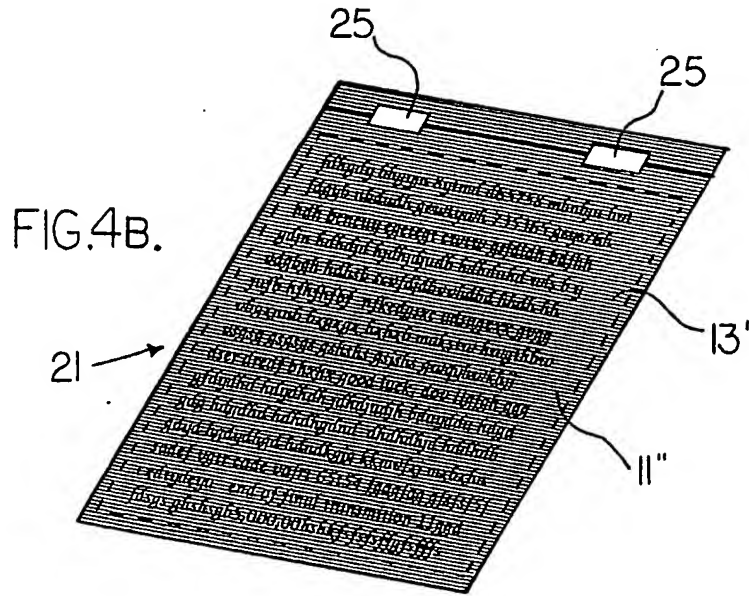


FIG. 5.

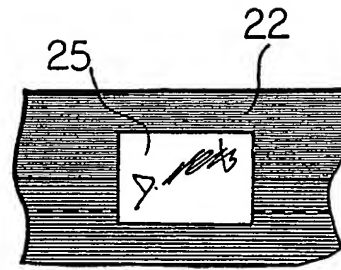
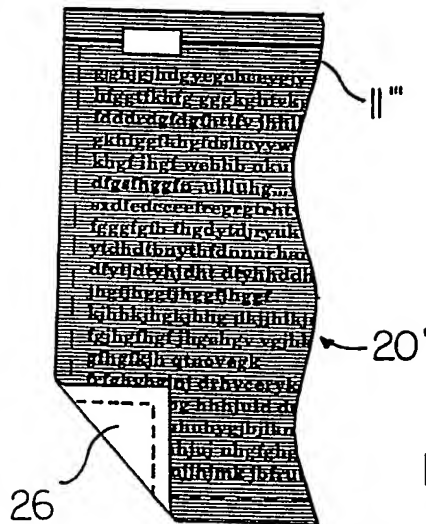
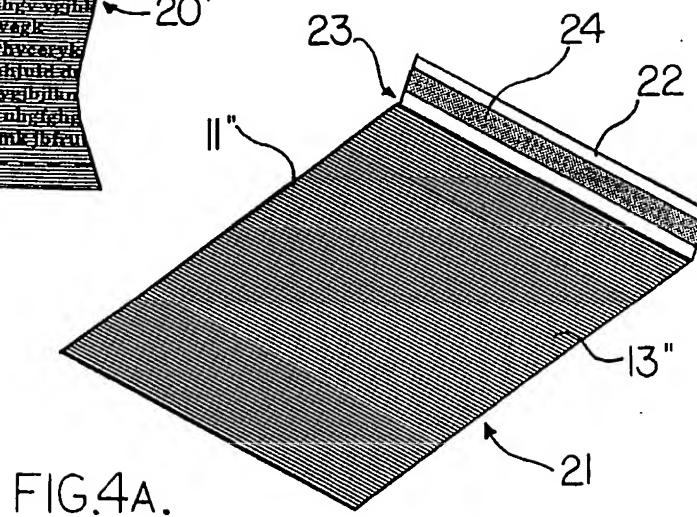


FIG. 4c.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US93/05268

A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :B42D 15/00

US CL :283/72

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 283/72

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

283/17, 72, 73, 94, 901, 902; 380/54, 55; 229/68r, 303, 306

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	U. S., A, 3,151,520 (NADEAU) 06 October 1964 (see entire document).	1-16
A	U.S., A, 3,178,993 (FERRIS ET AL) 20 April 1965(see entire document).	1-16
A	U.S., A, 4,498,736 (GRIFFIN) 12 February 1985 (see extradocument)	1-16
A	U.S., 4,557,505 (SCHAEFER ET AL) 10 December 1985 (see entire document).	1-16
A	U.S., A, 4,912,761 (TAN ET AL) 27 March 1990	1-16
A, P	U.S., A, 5,197,663 (STUDE) 30 March 1993 (see entire document).	1-16

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:	T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be part of particular relevance	X*	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	Y*	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		
O document referring to an oral disclosure, use, exhibition or other means		
P document published prior to the international filing date but later than the priority date claimed	*A*	document of a member of the same patent family

Date of the actual completion of the international search

12 October 1993

Date of mailing of the international search report

07 DEC 1993

 Name and mailing address of the ISA/US
 Commissioner of Patents and Trademarks
 Box PCT
 Washington, D.C. 20231

Facsimile No. NOT APPLICABLE

Authorized officer

W. Fridie

Laura Dorsey for

Telephone No. (703) 308-1148

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US93/05268

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	U.S., A, 5,071,061 (WILLIS) 10 December 1991 (see entire document).	1-16

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐

The additional search fees were accompanied by the applicant's protest.

☐

No protest accompanied the payment of additional search fees.

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

Group I, claims 1-16 drawn to the invention classified in class 283, subclass 72.

Group II, claims 17-22 drawn to the invention classified in class 229, subclass 68R.

Group I - claims 1-16 are directed to a copy preventing screen classified in class 285, subclass 72 and have the special technical feature of having an adhesive tape comprise. Group II - claims 17-22 are directed to a securely envelope classified in class 229 subclass 68R and have the special technical feature of a sheet receiving openings and a sealing means. Group I does not have the special technical feature of Group II and Group II does not have the special technical feature of Group I.